Responsive to the objection to claims 30-39 on the basis of informalities, Applicant has amended claims 30, 33, and 35-37, keeping in mind the comments offered by the Examiner. Applicant submits that claims 30-39 are now in allowable form and hereby respectfully request that the objection thereto on the basis of informalities be withdrawn.

Responsive to the rejection of claims 1-7, 11-19, 23-28, and 30-33 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,633,811 (Canada et al.) in view of U.S. Patent No. 5,724,843 (Kirii et al.) and further in view of U.S. Patent No. 5,602,757 (Haseley et al.), Applicant respectfully traverses this rejection and submits that claims 1-7, 11-19, 23-28, and 30-43 are in condition for allowance.

Claims 1 and 19 each recite in part:

> a control unit configured to selectively control said mechanical press in accordance with signals...

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by any of the cited references alone or in combination.

Canada et al. discloses a hand held data collector and analyzer system to collect vibration data from machines for use in predicting maintenance requirements. The Examiner contends, as per the Advisory Action, that Canada et al. teaches controlling the mechanical press in accordance from signals from the signal

conditioner, as per column 4, lines 42-48. That section of Canada et al. discloses that control over an optional conditioning circuit is a accomplished via an optional digital signal processor (DSP). Canada et al. further indicates that DSP's 180 and 212 operate independently and serially upon the incoming signal to receive, analyze, and store the data, all without interrupting the CPU 80. Specifically, both DSP's 180 and 212 typically will perform Fast Fourier Transform calculations and then perform a rasterization function to graphically display the spectrum produced by the Fast Fourier Transform. Each DSP 180, 212 also identifies data that needs to be stored in accordance with instructions previously received from the CPU 80.

As such, when considering the disclosure of Canada et al. as a whole, it can be seen that the control responsibility of the DSP's 180 and 212 is limited to data manipulation and does not extend to the control of the machine from which the data was gathered. Furthermore, Canada et al. does not disclose or suggest a data link mechanism within the hand held data collector and analyzer system that would facilitate the transmission of a control signal back to the machine from which the data was initially collected. Additionally, Canada et al. does not specifically disclose or suggest using such an hand held data collector and analyzer system in relation to a mechanical press. Therefore, Applicant respectfully submits that Canada et al. fails

to teach or suggest the present invention as set forth in either of claims 1 and 19.

Kirii et al. disclose various methods of diagnosing a pressing machine for an abnormality on the machine or to check the machine if it is in order for assuring a product with intended quality. However, Kirii et al. does not disclose or suggest using signals created by such a diagnosis to control the operation of a press machine. Thus, Kirii fail to teach or suggest a control unit configured to selectively control the mechanical press in accordance with measurement signals, and thus, do not overcome the deficiency present in Canada et al.

Haseley et al. discloses a predictive vibration monitoring system including a microcontroller 20 capable of issuing a command signal to a monitor machine if the analyzed vibration signature were to indicate an impending fault condition. Haseley et al. further disclose that the vibration monitoring system disclosed thereby may be installed as original equipment or, alternatively, as a retrofit assembly therein. As such, Haseley et al. does not disclose or suggest incorporating a vibration monitoring system as part of a handheld unit such as that disclosed by Canada et al.

Moreover, Haseley et al., by being incorporated with the equipment being monitored, is designed to provide a signal directly to the monitored equipment. Haseley et al. does not disclose or suggest the provision of a datalink system (e.g., a

modem) that would permit a command signal to be transferred to a monitored machine without a direct signal connection therebetween. Such a datalink mechanism would be required in Canada et al. if the microcontroller 20 of Haseley et al. were to be incorporated therein to allow transfer of a command signal thereby to the machine to be monitored.

A further issue with the possible combination of Canada et al. and Haseley et al. is the instrument of Canada et al. is specifically to be handheld. Accordingly, in order to not render Canada et al. unsatisfactory for an intended purpose thereof (MPEP §2143.01), the instrument of Canada et al. or any modified version thereof is/would be subject to rather severe weight and size restraints, imposed by the need to be handheld. The addition of a further microprocessor and an accompanying datalink mechanism would conflict with such weight and size constraints, likely rendering the prior art invention of Canada et al. unsatisfactory for its intended purpose (i.e., being a handheld apparatus). As a result, there would be no suggestion or motivation to make such a proposed modification. *In re Gordon*, 733 F.2d 900 221 USPQ 1125 (Fed. Cir. 1984); MPEP § 2143.01.

For all of the foregoing reasons, Applicant respectfully submits that claims 1 and 19, and claims 2-18 and 20-28 dependent therefrom, are now in condition for allowance. Applicant hereby

respectfully requests that the rejection based upon Canada et al. in view of Kirii et al. and Haseley et al. be withdrawn.

Claim 30 recites in part:

> a controller being operatively coupled to said processor, said controller being configured to selectively control said press machine.

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by the cited references, alone or in combination, for essentially the same reasons set forth with respect to claims 1 and 19. Thus, Applicant respectfully submits that claim 30, and claims 31-35 depending therefrom, are now in condition for allowance. As such, Applicant respectfully requests the rejection thereof based upon the above combination of references be withdrawn.

Claim 36 recites in part:

> a press machine controller operatively coupled to said press machine vibration measurement device.

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by the cited references, either alone or in combination, for essentially the same reasons set forth in respect to claims 1 and 19. Accordingly, Applicant submits that claim 36, and claims 37-39 depending therefrom, are now in condition for allowance and hereby respectfully requests that the rejection thereof based upon the above-referenced combination be withdrawn.

Claim 40 recites in part:

> selectively controlling press machine operation in accordance with the vibration activity measurement.

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by the cited references, alone or in combination, for essentially the same reasons set forth with respect to claims 1 an 19. As such, Applicant respectfully submits that claim 40, and claims 41-43 depending therefrom, are now in condition for allowance and hereby respectfully requests that the rejection based upon the above-referenced combination be withdrawn.

Claim 8 has been rejected under 35 U.S.C. § 103(a), as being unpatentable over Canada et al. in view of Kirii et al. and Haseley et al., and further in view of U.S. Patent No. 3,859,847 (Ronemus). However, claim 8 depends from claim 1, which is in condition for allowance for the reasons set forth above. Accordingly, Applicant respectfully submits that claim 8 is also in condition for allowance and hereby respectfully requests the rejection thereof, based upon the above-referenced combination, be withdrawn.

Claims 9, 10, 20-22, and 29 have been rejected under 35 U.S.C. § 103(a), as being unpatentable over Canada et al. in view of Kirii et al. and Haseley et al., and further in view of U.S. Patent No. 5,802,151 (Bevill, Jr. et al.). Claims 9 and 10 depend

from claim 1, while claims 20-22 depend from claim 19, with claims 1 and 19 being in condition for allowance for the reasons set forth above. Thus, Applicant respectfully submits that claims 9, 10, and 20-22 are in condition for allowance due to their dependency upon one of allowable claims 1 and 19. Applicant further submits that claim 29 is allowable on its own merits.

Claim 29 recites in part:

> generating a unique press vibration severity/reliability zone chart; . . .
>
> outputting the monitored vibration severity and the corresponding vibration severity/reliability zone . . .

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by any of the cited references, alone or in combination.

Furthermore, claim 29 recites in part:

> selectably controlling said mechanical press in accordance with the monitored vibration severity.

Applicant respectfully submits that such an invention is neither taught, disclosed, nor suggested by any of the cited references, alone or in combination. Specifically, the Canada et al., Kirii et al., and Haseley et al. references, alone or as a whole, do not disclose or suggest such an invention for reasons set forth with respect to the discussion of claims 1 and 19 above. Furthermore, Bevill, Jr. et al. does not manage to overcome the shortcomings set forth with respect to the above combination of references.

Bevill, Jr. et al. discloses a telephone interface protection circuit and a modem incorporating the telephone interface protection circuit. As such, Bevill, Jr. et al. does not disclose or suggest the control of a mechanical press based upon monitored vibration severity.

Additionally, the primary reference, Canada et al., is directed to handheld data collector and analyzer systems that are used for vibration data collection for machines. As Canada et al., does not disclose the handheld instrument to have a telephone circuit, Canada et al. does not disclose any systematic problem to which Bevill, Jr. et al. could be directed. Thus, there is no motivation to combine Bevill, Jr. et al. with the primary reference, Canada et al.

For all of the foregoing reasons, Applicant respectfully submits that the supplied combination of references does not render claim 29 obvious and hereby respectfully requests that the rejection thereof, based upon the above-cited reference combination, be withdrawn.

In the Advisory Action dated September 6, 2002, by the Examiner, there is no clear indication as to whether or not the amendment portion of Applicant's previous response had been entered. The amendments to claims 30, 33, 35, 36, and 37 therein were made solely as to overcome the claim objections raised by the Examiner in the first section of the Final Office Action.

Applicant has re-submitted those changes as part of this Response and hereby respectfully request that an indication their consideration be made by the Examiner as part of the next communication from the U.S.P.T.O.

Applicant respectfully requests that all rejections be withdrawn and that the Examiner forward a notice of allowability to the undersigned.

If the Examiner has any questions or comments that would speed prosecution of this case, the Examiner is invited to call the undersigned at 260/485-6001.

Respectfully submitted,

Randall J. Knuth
Registration No. 34,644

RJK/JTK10

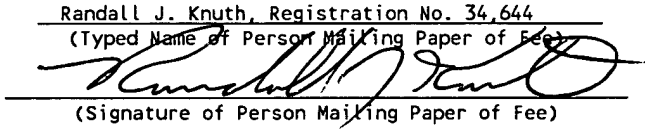
Encs: Marked-Up Claims
Replacement Claims
Replacement Specification
Petition for Extension of Time
Request for Continued Examination (RCE)
Check No.6589($570)
Return Postcard

EXPRESS MAIL MAILING NUMBER EL161760100US

Date of Deposit: November 19, 2002

I hereby certify that this paper or fee is being deposited with the United States Postal Service EXPRESS MAIL POST OFFICE TO ADDRESSEE service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Randall J. Knuth, Registration No. 34,644
(Typed Name of Person Mailing Paper of Fee)



(Signature of Person Mailing Paper of Fee)

RANDALL J. KNUTH, P.C.
3510-A Stellhorn Road
Fort Wayne, IN 46815-4631
Telephone: 260/485-6001
Facsimile: 260/486-2794

REPLACEMENT CLAIMS

Please replace claim 30 with the following:

30. A system in combination with a press machine and a press machine sensor assembly, said system comprising:

a press machine vibration monitoring apparatus, said press vibration monitoring apparatus being operatively coupled to said press machine sensor assembly, said press machine vibration monitoring apparatus comprising:

a processor to process sensor signals generated by said press machine sensor assembly; and

a controller being operatively coupled to said processor, said controller being configured to selectably control said press machine.

31. The system as recited in Claim 30, wherein said controller being configured further to control said press machine in accordance with processed sensor signals received from said processor.

32. The system as recited in Claim 30, wherein said processor being configured to generate relative to said press machine at least one of an acceleration measurement, a velocity measurement, and a displacement measurement.

Please replace claim 33 with the following:

33. The system as recited in Claim 30, wherein said press machine sensor assembly includes at least one accelerometer.

REPLACEMENT CLAIMS

34. The system as recited in Claim 30, further includes a display operatively coupled to said processor.

Please replace claim 35 with the following:

35. The system as recited in Claim 30, wherein said press machine vibration monitoring apparatus defining a built-in element of said press machine.

Please replace claim 36 with the following:

36. An apparatus in combination with a press machine and a press machine sensor assembly, said apparatus comprising:

a press machine vibration measurement device operatively coupled to said press machine sensor assembly; and

a press machine controller operatively coupled to said press machine vibration measurement device.

Please replace claim 37 with the following:

37. The apparatus as recited in Claim 36, wherein said press machine vibration measurement device further comprises a press acceleration determination unit, a press velocity determination unit, and/or a press displacement determination unit.

38. The apparatus as recited in Claim 36, further comprises:

a display operatively coupled to said press machine vibration measurement device and/or said press machine controller.

REPLACEMENT CLAIMS

39. The apparatus as recited in Claim 36, wherein said apparatus having a built-in configuration relative to said press machine.

40. A method in combination with a press machine, said method comprising the steps of:

sensing and measuring vibration activity in said press machine; and

selectably controlling press machine operation in accordance with the vibration activity measurement.

41. The method as recited in Claim 40, further comprises the step of:

providing a built-in press machine vibration monitoring device configured to perform the vibration activity measurement and/or the press machine operation control.

42. The method as recited in Claim 40, further comprises the step of:

displaying the vibration activity measurement and/or a representation thereof.

43. The method as recited in Claim 40, further comprises the step of:

performing at least one of an alarm notification task, a vibration-related data storage task, a diagnostic task, and/or a

remote vibration-related data communication task, using the vibration activity measurement.

MARKED-UP CLAIMS

Please amend claim 30 as follows:

30. A system in combination with a press machine and a press machine sensor assembly, said system comprising:

a press machine vibration monitoring apparatus, said press vibration monitoring apparatus being operatively coupled to said press machine sensor assembly, said press machine vibration monitoring apparatus comprising:

a processor to process sensor signals generated by said press machine sensor assembly; and

a controller being operatively coupled to said processor, said controller being configured to selectably control said press machine.

31. The system as recited in Claim 30, wherein said controller being configured further to control said press machine in accordance with processed sensor signals received from said processor.

32. The system as recited in Claim 30, wherein said processor being configured to generate relative to said press machine at least one of an acceleration measurement, a velocity measurement, and a displacement measurement.

Please amend 33 as follows:

33. The system as recited in Claim 30, wherein said press machine sensor assembly includes at least one accelerometer.

MARKED-UP CLAIMS

34. The system as recited in Claim 30, further includes a display operatively coupled to said processor.

Please amend claim 35 as follows:

35. The system as recited in Claim 30, wherein said press machine vibration monitoring apparatus defining a built-in element of said press machine.

Please amend claim 36 as follows:

36. An apparatus in combination with a press machine and a press machine sensor assembly, said apparatus comprising:

a press machine vibration measurement device operatively coupled to said press machine sensor assembly; and

a press machine controller operatively coupled to said press machine vibration measurement device.

Please amend claim 37 as follows:

37. The apparatus as recited in Claim 36, wherein said press machine vibration measurement device further comprises a press acceleration determination unit, a press velocity determination unit, and/or a press displacement determination unit.

38. The apparatus as recited in Claim 36, further comprises:

a display operatively coupled to said press machine vibration measurement device and/or said press machine controller.

MARKED-UP CLAIMS

39. The apparatus as recited in Claim 36, wherein said apparatus having a built-in configuration relative to said press machine.

40. A method in combination with a press machine, said method comprising the steps of:

sensing and measuring vibration activity in said press machine; and

selectably controlling press machine operation in accordance with the vibration activity measurement.

41. The method as recited in Claim 40, further comprises the step of:

providing a built-in press machine vibration monitoring device configured to perform the vibration activity measurement and/or the press machine operation control.

42. The method as recited in Claim 40, further comprises the step of:

displaying the vibration activity measurement and/or a representation thereof.

43. The method as recited in Claim 40, further comprises the step of:

performing at least one of an alarm notification task, a vibration-related data storage task, a diagnostic task, and/or a

MARKED-UP CLAIMS

remote vibration-related data communication task, using the vibration activity measurement.